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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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CAPITOL PATENT & TRADEMARK LAW FIRM, PLLC  
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VIENNA, VA 22183

EXAMINER
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LI, SHI K

ART UNIT	PAPER NUMBER
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2613

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 09/896,248	<b>Applicant(s)</b> CAROLI ET AL.	
	<b>Examiner</b> Shi K. Li	<b>Art Unit</b> 2613	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 April 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4-14 and 16-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-14 and 16-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sridhar (U.S. Patent 5,778,118) in view of Park et al. (U.S. Patent Application Pub. 2002/0067526 A1).

Regarding claims 19 and 21, Sridhar discloses in FIG. 1 an add/drop node and method capable of adding or dropping at least one optical channel of a WDM signal. The add/drop node (FIG. 1) comprises an optical coupler 20 for receiving and coupling a WDM input signal to both a drop transmission path (first path) and a through transmission path (second path) within the add/drop node (col. 4, lines 10-21), an optical splitter 62 coupled to the drop transmission path 60 for optically separating the WDM signal into a plurality of optical channels wherein one or more of the plurality of optical channels are selectively dropped from the WDM input signal (col. 5, line 64-col. 6, line 2), a first wavelength blocking element 40 coupled to the through transmission path 50 for selectively blocking the one or more optical channels being selectively dropped so that only optical channels not being dropped at the add/drop node are passed on the through transmission path (col. 5, lines 2-5), an add transmission path (third path) 83, an optical combiner 82 for combining a plurality of optical channels to form a WDM add signal and a combiner 30 coupled to each of the add and through transmission paths for combining the add signal with optical channels in the through transmission path to generate a WDM output signal for transmission from the add/drop node (col. 4, lines 20-24).

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The difference between Sridhar and the claimed invention is that Sridhar does not teach a second wavelength blocking element for selectively blocking optical channels that are passed along in the through transmission path. Park et al. shows in FIG. 2 a add filter 271 for selectively blocking optical channels that are passed along in the through transmission path. Park et al. teaches in paragraph [0028] the reflection type filter consists of the reflection filters corresponding to N-m wavelengths where N is the wavelengths of the WDM input signal at the input port of the add/drop node and m is the dropped wavelengths. One of ordinary skill in the art would have been motivated to combine the teaching of Park et al. with the add/drop node of Sridhar because the add filter eliminates optical noise and avoid wavelength collision (paragraphs [0023] and [0028] of Park et al.). Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a block filter for blocking channels that are not to be added, as taught by Park et al., in the add/drop node of Sridhar because the add filter eliminates optical noise and avoids wavelength collision.

Regarding claims 20 and 22, Sridhar teaches in col. 9, lines 53-55 to use tunable filter for dynamically configuring selective blocking function.

3. Claims 1-2, 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sridhar and Park et al. as applied to claims 19-22 above, and further in view of Danagher et al. (U.S. Patent 5,959,749).

Sridhar and Park et al. have been discussed above in regard to claims 19-22. Regarding claim 1, Sridhar teaches in col. 4, lines 31-35 equalizing gain. The difference between Sridhar and Park et al. and the claimed invention is that Sridhar fails to teach equalizing gain on a per-channel basis. Danagher et al. teaches in FIG. 2 a configuration for dynamically equalizing gains

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in a per-channel basis. Danagher et al. teaches in col. 7, lines 4-10 that the attenuators 115 can be controlled based on the estimated power of all the individual optical channels, thereby to equalize the optical power spectrum of WDM signal. One of ordinary skill in the art would have been motivated to combine the teaching of Danagher et al. with the modified add/drop node and method of Sridhar and Park et al. because adjusting each channel individually allows accurate equalization according to any desired shape. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to equalize power spectrum of the WDM signal on a per-channel basis, as taught by Danagher et al., in the modified add/drop node and method of Sridhar and Park et al. because adjusting each channel individually allows accurate equalization according to any desired shape.

4. Claims 4-8 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sridhar, Park et al. and Danagher et al. as applied to claims 1-2, 9 and 12 above, and further in view of Thomas et al. (U.S. Patent 6,429,974 B1).

Sridhar, Park et al. and Danagher et al. have been discussed above in regard to claims 1-2, 9 and 12. Regarding claim 4, the difference between Sridhar, Park et al. and Danagher et al. and the claimed invention is that Sridhar, Park et al. and Danagher et al. do not teach an interleaver for separating the WDM input signal into first and second groups. Thomas et al. teaches in FIG. 12 an add/drop system using an interleaver I for separating the WDM input signal into first and second groups so that optical channels in each of the groups are spaced apart by at least one wavelength as illustrated in FIG. 10. One of ordinary skill in the art would have been motivated to combine the teaching of Thomas et al. with the modified add/drop node and method of Sridhar, Park et al. and Danagher et al. because it supports batch processing of a group

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of channels with common components, e.g., express routing path for a group of channels. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use interleaver to separate WDM signal into first and second channel groups, as taught by Thomas et al., in the modified add/drop node and method of Sridhar, Park et al. and Danagher et al. because it supports batch processing of a group of channels with common components.

Regarding claims 5 and 6, Thomas et al. shows in FIG. 10 optical channels in each of the first and second groups are spaced apart by at least one wavelength, wherein the first group includes optical channels having an odd channel number and the second group includes optical channels having an even channel.

Regarding claims 7-8, Thomas et al. shows in FIG. 12 an express routing path (pass-through). Thomas et al. also teaches in FIG. 13 express routing path 1314 where channels cannot be dropped.

Regarding claims 10-11, Thomas et al. teaches in FIG. 14 interleavers for separating the WDM input signal in the drop transmission path into at least two groups of optical channels according to a prescribed pattern so that channel spacing between optical channels is increased (see Thomas et al, col. 6, line 66-col. 7, line 8)

5. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sridhar, Park et al. and Danagher et al. as applied to claims 1-2, 9 and 12 above, and further in view of Bouevitch et al. (U.S. Patent 6,498,872 B2).

Sridhar, Park et al. and Danagher et al. have been discussed above in regard to claims 1-2, 9 and 12. The difference between Sridhar, Park et al. and Danagher et al. and the claimed invention is that Sridhar, Park et al. and Danagher et al. do not teach a dynamic gain equalizer.

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Bouevitch et al. teaches in FIG. 1 a dynamic gain equalizer that combines a multiplexer/demultiplexer and switch/attenuator as a compact device. One of ordinary skill in the art would have been motivated to combine the teaching of Bouevitch et al. with the modified add/drop node and method of Sridhar, Park et al. and Danagher et al. because the dynamic gain equalizer of Bouevitch et al. is compact and compatible with a plurality of parallel input/output optical waveguides. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the dynamic gain equalizer Bouevitch et al. in the modified add/drop node and method of Sridhar, Park et al. and Danagher et al. because the dynamic gain equalizer of Bouevitch et al. is compact and compatible with a plurality of parallel input/output optical waveguides.

6. Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sridhar, Park et al., Danagher et al. and Bouevitch et al. as applied to claims 13-14 above, and further in view of Thomas et al. (U.S. Patent 6,429,974 B1).

Sridhar, Park et al., Danagher et al. and Bouevitch et al. have been discussed above in regard to claims 13-14. Regarding claim 16, the difference between Sridhar, Park et al. and Danagher et al. and the claimed invention is that Sridhar, Park et al., Danagher et al. and Bouevitch et al. do not teach an interleaver for separating the WDM input signal into first and second groups. Thomas et al. teaches in FIG. 12 an add/drop system using an interleaver I for separating the WDM input signal into first and second groups so that optical channels in each of the groups are spaced apart by at least one wavelength as illustrated in FIG. 10. One of ordinary skill in the art would have been motivated to combine the teaching of Thomas et al. with the modified add/drop node and method of Sridhar, Park et al., Danagher et al. and Bouevitch et al.

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because it supports batch processing of a group of channels with common components, e.g., express routing path for a group of channels. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use interleaver to separate WDM signal into first and second channel groups, as taught by Thomas et al., in the modified add/drop node and method of Sridhar, Park et al., Danagher et al. and Bouevitch et al. because it supports batch processing of a group of channels with common components.

Regarding claim 17, Thomas et al. shows in FIG. 12 an express routing path (pass-through). Thomas et al. also teaches in FIG. 13 express routing path 1314 where channels cannot be dropped.

Regarding claim 18, Thomas et al. teaches in FIG. 14 interleavers for separating the WDM input signal in the drop transmission path into at least two groups of optical channels according to a prescribed pattern so that channel spacing between optical channels is increased (see Thomas et al, col. 6, line 66-col. 7, line 8)

### ***Response to Arguments***

7. Applicant's arguments filed 18 April 2009 have been fully considered but they are not persuasive.

The Applicant argues that Sridhar teach away from the claimed invention. The Applicant cites certain part of Sridhar as evidence. The Applicant states "For example, in column 7, lines 7-18 Sridhar states: "Although the added optical channels are depicted as corresponding to the wavelengths blocked...this is not a requirement ....." and "the optical signals which are added do not contact the optical filtering elements..." and yet further "...an arbitrary number of optical channels may be added...; the wavelengths ...do not need to correspond to the wavelengths of the



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channels blocked ....". In sum, rather than suggest a relationship between the channels that are added in an add path and those that are passed along in a through path Sridhar goes out of its way to state that there is no relationship (see also, column 6, lines 38-43)." The Examiner disagrees. Sridhar teaches in col. 7, lines 7-10 "Although the added optical channels are depicted as corresponding to the wavelength blocked by optical filter 40, this is not a requirement for the add-drop multiplexer operation." This implies that it is suggested, recommended or normally that the added optical channels are corresponding to the wavelength blocked by the optical filter 40.

The Applicant argues "Though Danagher appears to disclose equalization, it is not per channel equalization." The Examiner disagrees. Danagher clearly teaches in FIG. 2 equalization on a per-channel basis.

### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shi K. Li whose telephone number is 571 272-3031. The examiner can normally be reached on Monday-Friday (6:30 a.m. - 4:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on 571 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

skl  
2 July 2009

/Shi K. Li/  
Primary Examiner, Art Unit 2613